

Geared Learning Box

1. Introduction	2
1.1 What is Geared Learning?	2
1.2 Why should your team utilize Geared Learning?	3
1.3 Editions and Additional Material	3
2. How to run Geared Learning	4
2.1 Teams	4
2.2 Time Frame	4
2.3 Cost (Coming soon)	7
3. Geared Learning Curriculum	8
3.1 General Geared Learning	8
3.2 Operations	9
3.2.1 For Instructor	9
3.2.2 Letter of Intent Writing (Coming soon)	9
3.2.3 Grading Rubric (Coming soon)	10
3.2.4 Prizes/Rewards	11
3.3 Engineering	12
3.3.1 For Instructor	12
3.3.2 Robot	12
3.3.3 FoosBot Game Manual	13
3.3.4 FoosBot Field Construction Guide	13
3.4 Marketing	13
3.4.1 For Instructor	13
3.4.2 Logos	13
3.4.3 Social Media Accounts	14
3.4.4 Pit Boards	14
3.5 Outreach	14
3.5.1 For Instructor	14
3.5.2 Event Participation	15
3.5.3 Social Media Updates	15
4. Competition	15
4.1 Setting Up	15
4.1.1 Field setup	15
4.1.2 Pit Space	16
4.2 Volunteers	16
4.2.1 Official Positions	16
4.2.2 General Volunteers	16

4.3 Competition	16
4.3.1 Match Schedules	16
4.3.2 Point calculators	16
4.4 Awards and Presentation	17
5. Glossary	17
6. Contact Us	17

1. Introduction

We are FIRST Team Paradox 2102 from San Dieguito High School Academy in Encinitas, California. Each year, our team of 60+ student members continues to grow, presenting us with the challenge of effectively integrating new members, ‘rookies,’ into the team dynamic. Since our team's establishment in the 2006-2007 season, we have strived to teach rookies about FIRST, and our team, through interactive student-led programs. These programs are designed to quickly introduce rookies to all aspects of our team, helping them decide where they want to focus their efforts. In the summer of 2015, a group of motivated students from our Engineering Branch came together to develop and test the mini FRC game *FoosBot*. Building off of this idea, we have created a program focused around a robot game that incorporates all aspects of running an FRC team. We have documented our experience into this comprehensive guide for the utilization of all FRC teams. Now, without further adieu, we proudly present: *Geared Learning*.

1.1 What is Geared Learning?

Geared Learning (GL) is a rookie education program designed to quickly integrate rookies into the team dynamic. GL incorporates the entire FIRST experience by breaking up the curriculum, like our team, into four parts: Operations, Engineering, Outreach and Marketing. Just like FRC, GL's core is the robot game. Engineering walks teams through how to create a robot out of VEX and 3D printed parts to compete in the mini FRC game, *FoosBot*. To complete the GL experience teams also write mini grants for Operations, design team logos, “Mini Pit Boards,” and social media accounts in Marketing, and lastly participate in and record their experiences at a team-related community event for Outreach. These additional aspects of GL compliment the robot game and teach rookies that an FRC team is much more than just building a robot.

In addition to training rookies, another important aspect of GL is teaching veteran team members how to teach. This entire program is designed to be student run. Naturally, FRC team mentors will help, but the focus remains on students teaching and learning together.

1.2 Why should your team utilize Geared Learning?

GL provides an easy and effective way to integrate rookies into an FRC team. By engaging rookies in a competitive atmosphere that allows imagination to fuel creation, rookies become submersed in the excitement of FIRST. This early engagement and excitement makes rookies more likely to continue contributing to the team.

GL helps rookies find where their passions lie and how they want to participate on the team. Being able to immediately gain first hand experience provides rookies with useful skills

for build season. GL also provides veteran students with the valuable opportunity to learn how to teach. However, most importantly, GL encourages team members to get to know each other and fosters friendships.

1.3 Editions and Additional Material

The GL Box is a large project that has been made with the help of many students and mentors. We at Team Paradox will continue to add more information and improve this guide as time goes by, so check back often to find new content and added links.

What you are currently reading is the GL Box Manual. This is the most extensive guide to GL but the GL Box is not complete without a few other documents, namely the *FoosBot Game Manual* and the *Field Construction Guide*. Some places in the GL Box Manual will refer you to these or other resources which can be found on the same page of our website as this Manual. In addition, some information contained in this manual is also linked on our website as separate documents, such as the *Team Info Sheet* for Operations GL, for easy of use. Sections that have their own separate links will have a note at the bottom of their section with the link's name in asterisk's.

2. How to run Geared Learning

This section contains an overview of the logistics behind running GL including: forming teams, time management, and costs. This section does not provide the actual curriculum for GL (which is detailed in section 3); however, it provides necessary information to successfully run a GL season.

2.1 Teams

GL teams are ideally composed of 4 rookies and 1 veteran student that acts as their 'mentor.' We recommend selecting teams in one of these three different ways:

- 1.) Allow rookies to choose their own groups. This option insures that rookies will be in groups they enjoy; however, it does not insure they meet new people and allows for some to be left out which in this critical time for joining the team may cause them to leave.
- 2.) Select groups randomly. While this method allows rookies to meet new people, rookies may feel isolated while away from their friends, and therefore less motivated to stay on the team.
- 3.) Instructor creates groups. This ensures diversity, while allowing rookies to have a friend in their group.

In all scenarios mentors are assigned.

Once groups are selected, avoid taking groups apart as much as possible, for this can set students behind. Allow rookies that join late to join a team of their choice. However, do not allow any team to exceed 6 rookies.

To be able to play a complete match in the GL game *FoosBot* there must be at least 4 GL teams participating, for a total of 16 rookies. If you have less rookies, teams can be down sized, to a minimum of 2 rookies per team for a total 8 rookies. The *FoosBot* game can be modified to work with fewer teams participating.

2.2 Time Frame

GL runs for about two and a half months, from the end of September to the beginning of December. Our team holds GL sessions twice a week, on Tuesdays and Thursdays, from 3:15-5:00pm. Nearing the end of the GL season teams are also allowed to come in on Saturdays for extra time from 10-2pm. The calendar below provides a suggested schedule for how space out the GL Curriculum.

If this schedule does not work for your team, look at the approximate amount of time it takes to complete each GL section to help you create a schedule that best meets your team's needs.

Approximate time to compete:

- General: 3 hours
 - All completed during GL sessions
- Operations: 6 hours, Some out of session time
 - Specific homework is given after each session that will need to be completed at home
- Engineering: 22 hours, out of session time used as needed
 - Extra time on weekends may be needed for teams to complete their robot on time
- Marketing: 7 hours, Optional out of session time
 - Teams are expected to finish any leftover work at home
- Outreach: 2 hour, Out of session time varies
 - The outreach event will naturally be outside of GL session hours and teams are expected to update their social media accounts during Marketing FL or at home.

The following schedule is recommended for teams that want to follow a classic GL format.

Week Number (Dates*)	[Meeting #] Plans
Week 1 (Sept. 25-29)	[Meeting 1] GL Kickoff- General GL: Overview, make teams _____

	<p>[Meeting 2] General: Finish making teams, come up with team names and team mission statements Outreach GL: Overview, show list of possible events, explain what participation means.</p>
<p>Week 2 (Oct 2-6)</p>	<p>[Meeting 3] Outreach GL: Finish explaining, give list of possible events, explain social media post requirements Marketing GL: Overview, start designing logos, start creating social media accounts</p> <hr/> <p>[Meeting 4] Engineering GL: examine game manual, began strategizing</p>
<p>Week 3 (Oct 9-13)</p>	<p>[Meeting 5] Operations GL: Overview, 1st session</p> <hr/> <p>[Meeting 6] Engineering GL: Finalize strategies and start drawing prototypes</p>
<p>Week 4 (Oct 16-20)</p>	<p>[Meeting 7] Marketing: Continue working on and finish logo's, continue working on designing social media accounts, post any updates</p> <hr/> <p>[Meeting 8] Engineering GL: Complete rough design of robot, start building drivetrain</p>
<p>Week 5 (Oct. 23-27)</p>	<p>[Meeting 9] Operations GL: Session 2</p> <hr/> <p>[Meeting 10] Engineering GL: design lesson, introduction to SolidWorks, start developing unique CAD design part</p>
<p>Week 6 (Oct. 30- Nov 3)</p>	<p>[Meeting 11] Marketing GL: Post updates on social media accounts Get extra help where needed</p> <hr/> <p>[Meeting 12] Engineering GL: Work on drive train and CAD designed part</p>
<p>Week 7 (Nov 6-10)</p>	<p>[Meeting 13] Operations GL: Session 3</p> <hr/> <p>[Meeting 14] Engineering GL: Continue working on robot and CAD designed part</p>
<p>Week 8 (Nov 13-17)</p>	<p>[Meeting 15] Engineering GL: electronics lesson/ start electronics, Finish CAD designed part</p> <hr/> <p>[Meeting 16] Engineering GL: Attach CAD designed part, finalize</p>

	electronics, programming lesson
Week 8 (Nov. 27-Dec. 1)	[Meeting 17] Marketing GL: Introduce pit boards, give time to make them Operations GL: IOL Due <hr/> [Meeting 18] Engineering GL: work on programming, practice driving
Week 9 (Dec. 4-8)	[Meeting 19] Engineering GL: Finishing programming, last minute fixes <hr/> [Meeting 20] Engineering GL: Drive practice, last minute fixes
December 9th: Competition	[Competition] Engineering GL: Completed Robot Marketing GL: Completed Pit board Due

*based on 2016 dates

2.3 Cost- Coming soon

There are a few basic materials that are needed to run GL

Part	Quantity	Cost/ Unit	Total Cost*	Link to Part
VEX KoP	1/ GL Team	\$499.99	\$1,999.96	http://www.vexrobotics.com/276-2700.html

* For 4 GL Teams

VEX KoP Includes 4 Motors, Battery and Battery Charger, Joystick, VEX Key (wireless connector), Required Tools, and More.

- robot
 - VEX/ FTC kits
 - batteries
 - computers
 - joysticks
 - 3D printing part
 - wheels
 - arduino board
- marketing

- small tri fold board

Each robot tends to consist of the following:

- plastic/aluminum base
- two servos for movement
- two or more wheels (swivel wheel for two-wheeled robots)
- arduino board
- battery unit w/ 6 batteries
- extra boards for sensors
- gearing/gear boxes

3. Geared Learning Curriculum

Below is the complete GL Curriculum. Each section explains it's purpose as part of GL, details how instructor should run their section and explains what teams are expected to produce in that section of GL. Additional resources, such as the *FoosBot Game Manual* or the Team Info Sheet, that are not in this manual are clearly labeled and linked.

It is important to note that for the GL curriculum Instructors have a very different role then team mentors. The Instructors each teach teams one of the 5 sections and work with all the teams. Menors, however, go with their team to each section and help them through the entire process. In sort Instructors are in charge of the lesson plan and giving the team's instructions while mentors are in charge of the team and helping them succeed.

3.1 General Geared Learning

This section of GL may be procured by any of the branch instructors, or by it's own instructor. Whoever is instructing this section, however, must have a clear understanding of what all the other sections of GL do, in order to give the rookies a complete overview. The General GL instructor is also in charge of splitting the rookies into teams and assigning mentors to them in accordance to the instructions in section 2.1 (Teams).

During the three hours allotted for general GL, teams must also come up with their team name and mission statement.

Some examples of GL mission statements are:

- 1) The mission of Team Armadillo is to further our understanding and knowledge of how a FIRST FRC team functions.
- 2) The mission of our team, the Armadillos, is to discover our passion for and increase awareness for STEAM fields.
- 3) The mission of Team Armadillo is to become more valuable, prepared, contributing members of Team Paradox.

Mission statements should clearly articulate the GL team's goals pertaining to STEAM, FIRST, and/or their FRC team. Teams should have their names and mission statements checked with the instructor for confirmation.

3.2 Operations

Operations GL allows students to practice writing a Letter of Inquiry (LOI). A LOI is a crucial beginning stage in appealing to a company for sponsorship.

3.2.1 For Instructor

Operations GL gives rookies the opportunity to request “money” through writing a LOI to improve their robot, to mimic how an FRC team does. Operations GL is broken up into three distinct lessons with specific homework after each due at the beginning of the next section. This rather rigid structure insures that team stay on schedule with writing their LOIs.

When presenting the Operations section of GL, make sure to explain how getting sponsorship works on your team and why it is important. In this competition, writing an LOI does not determine your ability to build a robot; however, well-written LOI's are rewarded with competitive advantages in the robot game.

LOI's are assigned a score by the Operations GL Instructor. While LOI's will not be anonymous, it is important to make sure that they are graded fairly according to the rubric below and be given a score from 0-4. Four for an expiratory LOI and a zero for not turning one in. LOI's must be graded by the robot competition not at/during the competition. Details about the prizes are shown in Section 3.2.4.

Below is the guidelines for how each session in Operations GL should be run, consisting of in class activities and homework assignments. Additionally, instructors should be sure to give teams the grading rubric to aid in their LOI endeavors.

3.2.2 Letter of Intent Writing

Each team has the opportunity to write a Letter of Intent/Inquiry (LOI) in order to receive advantages in the robot competition. The final form of the LOI is paragraph long responses to five prompted questions. Make sure LOI's are written professionally, as if they were going to real sponsors, paying close attention to spelling and grammar. Team submissions should include all the team members names and be typed, double-spaced in 12 point Times New Roman font.

Operations Geared Learning has a specific focus on Sponsor Relations, and is broken into three comprehensive sessions. First, students are introduced to the concept of grant writing and team funding. Moving from broad to specific, students are then asked questions about their team and their mission. The final session, application of newfound resources, allows students to use

what they have learned over the course of the previous two sessions to write their own Letter of Inquiry.

Operations Geared Learning: Session One [2 Hours Total]

- What is Operations? Why does it matter to you?
- Operations Divisions: Sponsor Relations, Travel and Registration, and Finance
- Students provided Team Info Worksheet where they can brainstorm what they want their team image to be
- Lead students through guided note taking for common application questions
- Students submit responses through survey and class reviews together
- **Homework:** Finish filling out Team Info Sheet

Operations Geared Learning: Session Two [2 Hours Total]

Session 2: LOI Practice Writing in class worksheet Paradox Foundation Letter of Inquiry given to fill out as homework

- Review/answer any questions about team info sheet
- Guided LOI writing practice
 - Guided Note-taking
 - Live writing session + q/A as needed
 - Final product for later review
- Submit in-class responses onto google form

Homework:

Session 3: Work on and hopefully finish the LOI

Homework: Finish writing LOI make sure it is turned in by _____

3.2.3 Grading Rubric

	1	2	3	4
Q1	-Incomplete -Doesn't address the guidelines -Poor explanation of team, goals and GL	-Mostly complete -Addresses some of the guidelines -Unclear explanation of team, goals and GL	-Complete -Addresses all of the guidelines -Sufficient explanation of team, goals and GL	-Complete -Addresses all of the guidelines -Thorough explanation of team, goals and GL

Q2	-Incomplete -Doesn't address the guidelines -Does not describe need and use for funds. Unclear on mentorship and team benefits.	-Mostly complete -Addresses some of the guidelines - Describes most of the need and use for funds. Some understanding of mentorship and team benefits.	-Complete -Addresses all of the guidelines - Describes need and use for funds. Good understanding of mentorship and team benefits.	-Complete -Addresses all of the guidelines -Thoroughly describes need and use for funds. -Complete understanding of mentorship and team benefits.
Q3	-Incomplete -Doesn't address the guidelines -Poor summary and insincere thank you.	-Mostly complete -Addresses some of the guidelines -Weak summary and basic thank you.	-Complete -Addresses all of the guidelines -Good summary and thank you.	-Complete -Addresses all of the guidelines -Well written summary and thoughtful thank you.
Q4				
Q5				
Spelling, grammar and formatting	-Multiple spelling and grammar errors.	-Some spelling and grammar errors.	-Less than two spelling or grammar errors.	-NO spelling or grammar errors.
			Total (average):	

3.2.4 Prizes/Rewards

There is a first and second place prize for LOI's. These are awarded to the teams that get the highest rubric score. The first place LOI gets to choose between the two prizes and the second place team gets the one that is left.

- Ultimate Offence - Allows the team's robot to cross the centerline of the field without any penalties for the entire duration of one match.

- Ultimate Defense - Allows the team's robot to stay in the gollie zone for an unlimited amount of time without penalties for one match.

Remember, **your team can create its own unique prizes** if you wish- these are just suggestions.

3.3 Engineering

Engineering GL grants students the opportunity to design, build, program, and drive a robot they built during their first year on the team.

3.3.1 For Instructor

Engineering GL provides rookies with the opportunity to start building a robot right off the bat. The Robot building section of GL is the core the GL curriculum. Teams are allotted around 22 hours to complete their robots, with the ability to request extra time, normally available on weekends, if needed.

Engineering GL is likely the part of GL rookies are most excited about; make sure to build upon their excitement but do not let it completely overshadow all other other aspects of GL. Naturally, if teams become behind in building their robot, they will try to push the other aspects of GL to the backburner. While this shouldn't be encouraged, it is to be expected and they shouldn't be penalized for it in the robot game, though it will impact their ability to win other awards.

Engineering GL will be run differently by ever FRC team just as every FRC team has their own unique way of running their build season. The Engineering GL section should be run to mimic how the FRC team typically runs their build season. In general teams will progress from strategizing, to designing, to electronics and end with programing. Since this is the rookie's first time building a robot teams may choose to do more formal instruction time versus having the majority be free building time. Use whatever combination of both works best for your team.

The majority of the instructions for building the robot are in the *FoosBot* Game Manual and *FoosBot* Field Construction Guide. Both these Guides should be readily accessible to teams.

3.3.2 Robot

Each team will complete a robot designed to compete in the mini FRC game FoosBot. This entails creating a robot out of VEX parts, creating one unique part with CAD, using the necessary electronics and lastly programming the robot. Each teams mentor will be integrally involved in coaching their teams on how to build a robot.

Refer to the *FoosBot* Game Manual for the game and requirements/restrictions on robots.

3.3.3 FoosBot Game Manual

FoosBot is a soccer like game played by two alliances of two teams each. Alliances compete against each other each with a robot on either side of the field to score in the opponent's goal. Points are awarded based on the the distance away from the goal the shooting robot is when the shot is made. For more details and complete guide to FoosBot, see the attached *FoosBot Game Manual*.

3.3.4 FoosBot Field Construction Guide

The FoosBot Field Element Guide is a written and illustrated manual detailing how to build the FoosBot Field. For a complete guide to the field, see the attached *FoosBot Field Element Guide*.

3.4 Marketing

In Marketing GL teams create team logos, social media accounts and Pit Boards to create a recognizable team image.

3.4.1 For Instructor

Marketing GL gives teams the opportunity to cultivate their image and be creative. While there is time allotted during GL sessions to work on Marketing GL it is expected that some work will need to be done on the rookies own time.

When presenting Marketing GL, make sure to stress the importance of a team's image and how it contributes to the entire FRC experience. A team's image helps to individualize a team and boost morale.

Marketing GL is broken up into three parts: logos designs, social media accounts and Pit Boards.

3.4.2 Logos

Logos are meant to represent and individualize each rookie GL team. The logo should be designed sometime during the second week of GL. Logos must include the team name and "Geared Learning" somewhere in it. Teams may have multiple designs, but they have to choose one main logo. The logo may be hand drawn originally, but a digital copy must also be made. Different designs may be worked on at home but time will also be allotted during GL to help create and digitize logos. The logo must be approved by an instructor.

3.4.3 Social Media Accounts

Teams will each create two social media accounts to promote their GL team. The accounts should convey what their team is and receive updates on how their robot building is going in addition to the updates required by Outreach GL (see section 3.4.3). Facebook, Instagram and Twitter are the three social media platforms that rookies can choose from. Other social media platforms may be allowed by the discretion of the Marketing Instructor.

3.4.4 Pit Boards

The Pit Board is designed to represent how the Pits at competition function as more than just places to hold the robots but also marketing platforms to promote the team. The Pit Board is meant to showcase the team's accomplishment through competitions. It should include the team name, the team logo, the team's grant, pictures of the robot, descriptions of what their robot does, and the team's individualized mission statement. The board should be visually attractive. Rookies may take time to create their Pit Board at home but time and supplies will be provided during GL time. Pit Boards should be approved by an instructor.

3.5 Outreach

For the Outreach section, GL teams must attend and participate at a team event and then post their experiences about this event on the social media accounts they made during the Marketing portion of GL.

3.5.1 For Instructor

Outreach GL provides rookies with the opportunity to discover and explore the relationship that an FRC team has with their community. The time allotted for the Outreach section of GL varies depending on the duration of the event(s) teams choose to attend and the time it takes them to update their social media accounts. It is expected that teams complete all of the Outreach GL requirements primarily on their own time.

It is important to show Outreach GL through the excitement of getting out in the community, talking with people and promoting FRC. Be careful not to allow Engineering GL to overshadow this section and work with team struggling to pick an event.

Outreach GL is broken up into two main parts. The first consists of GL teams actually attending an event. Make sure to create a list of approved events for your team that fall within your team's timeline for GL for teams to attend. Each rookie on the team must attend all or most of an event. The second part of Outreach GL is posting their experience at the event on their team's social media account.

3.5.2 Event Participation

Each rookie on a GL team must attend an event. All members of the team can attend the same event, they can all go to different events or any combination in between. For the event to count they must participate for the entire duration of the event. For particularly long events this requirement can be changed based on their mentor's discretion.

Some events that GL Teams could attend for our team include:

- Maker Faire SD
- Battle at the Border
- The Encinitas Fall Street Fair
- Our FLL QT
- Club Fair
- FLL Championships at Legoland
- SDA Bazaar

Events that rookies are able to attend will naturally vary depending on the team. All events should be based on getting rookies involved with the community.

3.5.3 Social Media Updates

After or during the event they are attending each rookie member on the team must create a post about it on their teams social media platform(s). Particularly good posts may be put on the entire team's social media accounts to promote that event. While each rookies member is only required to create one post creating more will help teams be considered for the Judges Award during competition.

4. Competition

The competition is the climax of all the rookies hard work and it should be run to reflect and celebrate that excitement and dedication.

4.1 Setting Up

4.1.1 Field Setup

For instructions on creating the field refer to the Field Construction Guide.

4.1.2 Pit Space

Teams should be provided with a pit table to work on. Depending on the size of the competition teams can be given more or less pit space. As an in-team and fairly informal

competition exact pit space is left to the discretion to the FRC team running the event with an emphases of space allotted being equal. At our competition we do enforce that all work must be done on the team pit table.

4.2 Volunteers

This competition should be run by the veteran students on the FRC team including those who have been working with the rookies throughout the GL season.

4.2.1 Official Positions

Official positions should be filled by veteran FRC team members that have not been directly working with the teams as mentors. They can be instructors or other members of the team that have not previously worked with the GL teams. It is important for them not to be team mentors to prevent favoritism in the judging or refereeing process.

Judges- There should be at least 3 judges. There may be more so long as there is always an odd number of judges. Judges should be veteran members of the team. They need to have ample experience in all aspects of GL. They will also need to read team's LOI's before the competition and check out teams social media accounts before or during competition to properly judge for the GL All Star Award and Quality Award. Judges should also talk to teams in the pits about their team and robot as well as observe how teams interact with their members and other teams at all times during the competition.

Referees- At least 2 referees are needed to monitor a FoosBot match. Referees are in charge of giving penalties and marking how many points an alliance has scored. All referees should have extensive knowledge about the robot game and have read the entire FoosBot Game Manual. Referees are the ultimate authority for what is legal and illegal in the competition including the typical job of the robot inspector. Referees can also be consulted for information in regards to the Quality Award.

4.2.2 General Volunteers

General volunteers will be needed for setup and cleanup along with MC's and score keepers. The teams mentors should also be there to support them through the competition.

4.3 Competition

Tournament length will vary depending on the amount of teams competition and how may match they compete in. A typical tournament with 5 teams playing 20 matches runs on average from 10:00am to 4:00pm.

4.3.1 Match Schedules

The competition runs on an FRC style system of changing alliances. When creating a match schedule make sure that each team has the same amount of time on and off the field and each team plays with and against every other team. As described in the game Manual alliances consist of two robots. An example schedule for 5 teams is provided below.

4.3.2 Point calculators

When a team finishes a match the points scored by their alliance are added to each of the team's personal total scores. There is no bonus for winning a match and no penalties for losing a match final scores are simply based off of how many goals a team has scored.

4.4 Awards and Presentation

Veteran members of the team decide which GL teams receive the awards based on what they see at the competition and review of their social media pages and submitted operations GL portions.

More awards can be added depending on how many teams are participating. The purpose of the awards is to make rookies feel special and facilitate team building while also adding to the competitive spirit of the game. During the awards ceremony we suggest doing a graduation form geared learning ceremony where rookies become full fledged members of the team. Within our team and team paradox spirits we should surround our rookies with pompoms and make sure to get a picture of them and their robots.

- First Place Robot Performance- This is an objective award given to the team that has the most points at the end of the tournament. It is based solely off the performance in the robot game. Teams are allowed to tie for this award.
- Geared All Star Award- This is a subjective award decided by the judges only. This award takes into consideration all of the other aspects of the competition. Teams LOI's and social media accounts are heavily weighted in this area but the quality of their robot, pit board, logos and general team behaviors should also be taken into consideration. If a team has not one any of the requirements of GL they are automatically disqualified for this award.
- Quality Award- This is a subjective award decided by the judges with optional consulting from the referees. is a judge selected award based off of how well the team's robot holds up and competence during competition. It is given to show an exemplarity built robot that is constant during the competition. However beyond just the robot this award also takes into account how well their pit is kept up, the

quality of their pit board and overall how well the team presents themselves in a professional manner.

5. Glossary

Rookies- new initiates to the team

Mentor- a veteran student, specifically designated to each team to guide them in all aspects of GL

Instructor- a student who leads one of the aspects of GL (General, Outreach, Marketing, Engineering, or Operations)

FoosBot- the official Geared Learning game created by Team Paradox, like soccer with robots

Mini Pit Board-a tri fold presentation board that each team creates to represent the Pits at competitions.

6. Contact Us

If you have any comments, questions, or concerns, feel free to contact us through our website <http://sдарobotics.org/>.